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Mr Steve Georganas MP
Chair
Joint Standing Committee on Trade and Investment Growth
PO Box 6021
Parliament House
CANBERRA
Canberra ACT 2600

Submitted via https://www.aph.gov.au/Parliamentary_Business/Committees/OnlineSubmission/Submit

Dear Mr Georganas

INQUIRY INTO AUSTRALIA'S TRANSITION TO A GREEN ENERGY SUPERPOWER

Woodside Energy Group Ltd (Woodside) welcomes the opportunity to comment on the Terms of Reference (ToR) of the Joint Standing Committee on Trade and Investment Growth (the Committee) Inquiry into Australia's Transition to a Green Energy Superpower (the Inquiry).

On 1 June 2022 Woodside and BHP Petroleum merged to create a leading independent global energy company. We are now the largest energy company listed on the Australian Securities Exchange, with business interests spread across five continents. Our headquarters remain on Whadjuk Noongar country in Perth, Western Australia.

Woodside provides energy that the world needs to heat and cool homes, keep lights on and support industry. We aim to thrive through the energy transition by building a low-cost, lower-carbon, profitable, resilient and diversified portfolio. Our climate strategy is an integral part of our company strategy. It has two key elements: reducing our net equity Scope 1 and 2 greenhouse gas emissions, and investing in the products and services that our customers need as they reduce their emissions.

Woodside established a new energy and lower-carbon services portfolio in 2018. In 2021, we announced an investment target of US$5 billion by 2030 in new energy products and lower-carbon services[1]. Our progress to date includes:

- Proposed ammonia and/or hydrogen production facilities announced in Perth, northern Tasmania, Oklahoma and New Zealand. The Perth opportunity proposes to make hydrogen and ammonia using a combination of natural gas reforming (with associated emissions abated or offset) and electrolysis powered by renewable energy. For the other three proposed facilities, electrolysis from renewable energy would be the sole production method.
- Participation in multiple hydrogen and ammonia demand creation initiatives for both export and local markets, including a proposed hydrogen refuelling station in Perth through the Western Australian government's Hydrogen Fuelled Transport Initiative.
- The proposed Woodside Solar Project, which could supply up to 100 MW of solar energy to Woodside's Pluto LNG facility and other industrial customers, with potential expansion to a maximum of 500 MW if customer demand arises in the future..

[1] Individual investment decisions are subject to Woodside's investment hurdles. Not guidance. Potentially includes both organic and inorganic investment.

- A collaboration in AI-enabled concentrated solar technology with US-based Heliogen, including a proposed 5 MW commercial-scale demonstration facility in California.
- Carbon Capture and Storage (CCS) acreage in the Northern Carnarvon Basin (owned through a Woodside-led Joint Venture), with potential to capture and store CO_2 emissions from multiple industries in Western Australia's Pilbara region. We are also a participant in CCS opportunities in offshore Northern Territory and Victoria.
- Investments and pilot projects in carbon utilisation technologies, which seek to capture greenhouse gas emissions and turn them into value-added products, such as feedstocks.
- A business unit to develop a sustainable offsets portfolio in support of our climate goals.

Noting that Australia has to date been the primary focus of our new energy and lower-carbon portfolio, we consider the Inquiry's ToR to be particularly relevant to Woodside's current and future activities.

In the transition to a green energy superpower, Australia has important natural advantages: abundant renewable and mineral resources; significant potential land availability; suitable geological formations for greenhouse gas storage; a highly educated, skilled and diverse workforce: a track record of early-stage innovation: and a reputation for safe and reliable energy production and export. We appreciate the Australian Government has recognised these natural advantages in policy work to date.

Woodside notes recent momentum in relevant federal Australian Government policy, legislation and budget commitments: the updated emissions reduction target of 43% below 2005 levels by 2030, the adoption of an 82% renewable target for the electricity grid by 2030, wide consultation on proposed reforms to the Safeguard Mechanism, the Indo-Pacific Economic Framework, electric vehicle policy, the A$20 billion Rewiring the Nation Fund, the A$500 million Powering Australia Technology Fund, additional resourcing for high-integrity product certification schemes and a forthcoming hydrogen regulatory review. We have participated in many of the relevant consultation processes.

We encourage the Commonwealth and state and territory governments to sustain this momentum with additional policy planning and support that will enable the 43% emissions reduction and 82% renewable energy targets. Integral to this work will be uniting Australian communities around a common purpose and ensuring Australia remains a competitive destination for investment and project development. Moving at pace on proposed decarbonisation projects will require resourcing to be directed towards priorities such as:

- Aligning state and federal objectives and timescales.
- Corresponding legislative and regulatory enablement that reduces uncertainty, increases transparency and avoids duplication.
- Making available 'shovel-ready' land, concentrated in strategic areas, with interests already reconciled and environmental data collected.
- Defining clear processes and response times for all categories of approvals, with approvals enduring once granted.
- Coordinating the planning and development of additional electricity transmission infrastructure, which enables multiple other decarbonisation solutions.
- Clear messaging to build social licence and consensus for decarbonisation projects.
- Support for local industries, including market access and supply chain opportunities.
- A skills and local workforce development agenda.

In addition to policy development, Woodside also observes jurisdictions are introducing scaled and clearly-defined financial incentives for producers and consumers, in order to secure first-mover advantage. A prime example is the recent passage of the *Inflation Reduction Act* (IRA) and the preceding *Infrastructure Investment and Jobs Act* (IIJA) in the United States. Woodside notes the following measures (amounts in $US):

Hydrogen	• $8 billion for Regional Hydrogen Hubs • New ten-year tax credit of $3/kg once facility is producing, or 30% investment tax credit • $10 billion to fund manufacturing projects that help establish a supply chain, such as fuel cell electric vehicles, infrastructure and electrolysers
Carbon Capture	• $3.5 billion for Regional Direct Air Capture Hubs • $3.47 billion carbon capture pilot program • $2.5 billion on CO_2 storage commercialisation

	• $100 million for front-end engineering and design for CO_2 transport infrastructure • $50 million to support agencies for permitting and monitoring • Introduction of new, and extension/enhancement of existing, tax credits for geological and other forms of storage
Solar	• Extension of production and investment tax credits • Increased credits if wage and apprenticeship requirements are met • Incentives for projects supplying to low-income communities
Domestic market creation	• Grant programs and credits focused on defraying capex and conversion costs for a range of potential lower-carbon energy use cases, such as ferries, port infrastructure, zero-emissions transport and associated infrastructure.

The IRA and IIJA incentive programs are expected to redirect and concentrate capital in the United States for both energy transition technologies (such as direct air capture of CO_2), and projects.

Downstream manufacturing and the associated local benefits will follow the technology and project capital flows. This will have implications for Australia's ability to capture wrap-around opportunities such as solar panel, wind turbine and electrolyser manufacturing.

Feedback from Woodside's potential carbon, hydrogen and ammonia export customers in the Asia-Pacific region is that the passage of the United States legislation is already influencing their decision making.

Woodside has also taken decisions in our portfolio in response to the changing external environment. In October 2022, Woodside awarded a long-lead contract for alkaline electrolyser equipment on our Oklahoma hydrogen opportunity, H2OK. We have not yet reached the equivalent stage on any of our Australian-based hydrogen projects, despite starting work on some of these opportunities earlier.

Beyond the United States, other jurisdictions are announcing new incentives that are more targeted to areas of existing or desired advantage, including Malaysia and Canada for CCS and India for renewable transmission.

We recognise Australia has different tax and fiscal settings to the United States and other energy export competitor countries. However, creative, strategic and timely collaboration between proponents, customers and governments will help Australia find solutions to ensure that the nation remains competitive for investment in a global context marked by increasing policy ambition.

In our view, Australia's focus needs to remain on lowering barriers to supply, lowering costs for customers and doing so at pace.

The role of natural gas in the energy transition

Gas remains Australia's key advantage to an affordable, fast and stable energy transition, particularly in the context of the current energy supply disruptions and high prices that are placing additional pressures on individuals, industries and economies across the globe.

Natural gas is the dominant product in Woodside's portfolio, representing approximately 81% of equity production in 2021. Most of our natural gas is sold as liquefied natural gas (LNG).

Some relevant attributes of natural gas are:

- When used to generate electricity, natural gas emits around half the life cycle emissions of coal[2];
- The International Energy Agency (IEA) advises that while renewable, nuclear and other low carbon power sources are expected to meet most additional power demand, gas and coal are expected to compete to fill the gap[3];

[2] IEA 2019. "The role of gas in today's energy transitions", page 4. All rights reserved.

[3] IEA 2021. "Coal 2021 - analysis and forecast to 2024", pages 11, 14 and 27. All rights reserved.

- More than half of the world's natural gas supply is used in sectors other than power generation, such as in industrial applications and fertiliser manufacturing, some of which have lower emissions intensity than power generation[4,5]
- In the form of LNG, natural gas is transportable and flexible between destinations, which is an advantage during an uncertain and potentially volatile energy transition[6];
- While energy storage technologies (such as batteries) continue to improve, natural gas enables cost-effective and reliable conversion of power grids to renewable electricity because of its ability to 'firm up' intermittent generation (that is, support intermittent renewable generation by quickly ramping up or down to ensure stable electricity supply)[7];
- Natural gas is also used for hydrogen manufacture by steam methane reforming. This process, including CCS, is predicted by the IEA to represent almost half of hydrogen production in 2030 in their Net Zero Emissions by 2050 Scenario[8].

In the Asia-Pacific region, key trading partners such as Japan are clear that they need Australia to continue as a secure, affordable supplier of energy, including liquefied natural gas (LNG) as a key transition fuel in their economy. We also see a significant ongoing role for Woodside's LNG production to support our customers' decarbonisation commitments In addition, customers are seeking to package LNG with CCS, hydrogen and ammonia .

Woodside's relationship with the Japan Bank for International Cooperation (JBIC) illustrates this point. In the 1980s, JBIC extended its first ever project financing to the Woodside-operated North West Shelf Project for LNG. Earlier this month, Woodside and JBIC signed an MOU aiming to promote continued cooperation in the LNG sector and the development of new energy products and lower-carbon services.

The transition is not a matter of gas 'or' renewables and new energy products; it is gas 'and' these solutions. The value of public, proactive, clear and consistent messaging from government in this regard cannot be underestimated.

Incentivising the transition to lower carbon intensity and export scale

In designing an effective incentives regime, a key learning from the United States and other countries is to incentivise lower carbon intensity, rather than narrowing technology options and eligibility. This is evidenced in the IRA's adoption of a sliding scale of credits aligned with kilograms of CO_2 per kilogram of hydrogen, rather than particular production methods. Focusing on carbon intensity captures a wider range of opportunities, investors and proponents. This approach already underpins the Australian Government's proposed Hydrogen Guarantee of Origin Scheme and could be applied to other policy and incentive work.

Woodside also supports prominent measures that entice customers to the Australian market by targeting their use cases and adoption barriers. Measures may include:

- Assistance for hard-to-abate sectors to access CCS.
- Clear export targets, informed by market intelligence.
- Contract-for-difference and other incentives that defray costs or additionally reward early customers.
- Policy to address CO_2 emissions (Scope 1 and 2), and in due course support the trade of CO_2 and its associated products (Scope 3).

While small grant schemes have helped drive early-stage initiatives, expanding the types of incentives available is recommended, and may include:

- Co-investment funds with industry for common-user assets.
- Investment allowances specific to new energy projects.
- Shorter effective lives of new energy assets for tax depreciation.
- Immediate tax deduction for feasibility assessments for new energy projects, including expenditure on pilot facilities.

[4] IEA 2021. "World Energy Outlook 2021", page 185. All rights reserved.

[5] Perdaman Urea Project 2019. "Greenhouse Gas Assessment – Final Report", pages 7-8.

[6] IEA 2020. Website accessed 2022. https://www.iea.org/commentaries/record-year-for-gasliquefaction-investment-lights-a-path-towards-market-flexibility. All rights reserved.

[7] Wood, T. and Ha, J. (2021). "Go for net zero". Grattan Institute. Page 30.

[8] IEA 2021. "Net Zero 2050 – A Roadmap for the Global Energy Sector", page 76. All rights reserved

- Progressing plans to expand the patent box regime to new energy patents[9].
- Targeted uplift in the Research and Development Tax Incentive for new energy, including demonstration activities.

We encourage the Committee to connect efforts across government to progress Australia's transition to a green energy superpower. Regulatory certainty, timely environmental and other approvals, access to land, and clear pathways to support the interests of Traditional Owners are also critical to the success of the Committee's work.

Woodside recognises the opportunity, through the work of the Committee, for Australia to be globally recognised as a destination of choice for lower-carbon energy investment and supply. The Inquiry is a timely opportunity, in a changing landscape, to harness diverse views and forge common goals.

We appreciate the Committee's consideration of the matters raised in this submission and look forward to working collaboratively.

Yours sincerely

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[9] In the 2022-23 Budget the Government announced its intention to expand the existing patent box tax regime (currently limited to medical and biotechnology patents) to low emissions technology innovations. Under the regime, taxpayers who commercialise Australian developed patented technologies that have the potential to lower emissions may be eligible to have their income taxed at a concessional tax rate (i.e. 17%).